OhioEPA

State of Ohio Environmental Protection Agency

Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

TELE: (330) 963-1200 **FAX:** (330) 487-0769
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

August 21, 2007

RE: NEASE CHEMICAL SUPERFUND SITE
COLUMBIANA COUNTY
FEASIBILITY STUDY
OHIO EPA COMMENTS

Ms. Mary Logan
Remedial Project Manager
U.S. EPA Region V
77 W. Jackson Blvd.
Chicago, IL 60604-3590

Dear Ms. Logan:

Enclosed are Ohio EPA's comments on the June 2007 Baseline Conditions Technical Memorandum ("Baseline Memo") for Operable Unit 2 of the Nease Chemical Superfund Site, located in Salem, Ohio. The report was submitted by Golder Associates, Inc., on behalf of Rutgers Organics Corporation (ROC). The comments include those provided by the Division of Drinking and Ground Waters' (DDAGW) reviewer, Kevin Palombo, and our Central Office remediation specialist, Dr. Timothy Christman.

Our comments are presented in two sections: (A) recommendations to support the remedial design and (B) revisions/ clarifications. The latter may be addressed by revised pages, at your discretion.

Overall, the Baseline Memo presentation of the data is clear. Ohio EPA has provided recommendations to support remedial design, as detailed in the comments.

Please note that comments have not yet been provided on Appendix F, Wetlands Delineation. I am coordinating internal review of this portion with our Division of Surface Water, and will provide comments when that review is complete.

Please let me know if I can clarify any of the comments. We will be happy to discuss these comments with the technical team for the Site to support remedial design, as necessary.

Sincerely,

Sheila Abraham, Ph.D.
Site Coordinator/Risk Management ES-III
Division of Emergency and Remedial Response

SA/ams

Enclosure

ec: Timothy Christman, ES-3, Ohio EPA, DERR, CO
Steve Love, Supervisor, Ohio EPA, DERR, NEDO
Kevin Palombo, Geologist 3, Ohio EPA, DDAGW, NEDO
Rod Beals, Manager, Ohio EPA, DERR, NEDO

BASELINE CONDITIONS TECHNICAL MEMORANDUM (JUNE 2007) FOR OPERABLE UNIT 2 OF THE NEASE CHEMICAL SITE, SALEM OHIO

Ohio EPA COMMENTS

Below are comments provided by Ohio EPA on the June 2007 Baseline Technical Memorandum for operable unit (OU) 2 of the Nease Chemical Site in Salem, Ohio.

Our comments are presented in 2 sections: recommendations to support the remedial design and revisions/ clarifications. The latter may be addressed by revised pages, at your discretion.

Ohio EPA's remedial design specialist had some concerns about the negative pore pressures indicated in the triaxial soil shear strength tests. Staff members in the Division of Solid Waste have indicated that while unusual, a negative pore pressure is possible and is not necessarily an indication of problems with the tests. Ohio EPA is therefore accepting these results.

As a general comment for future consideration, some 40 temporary wells were installed during the recent phases of the pre-design investigation. At some point during the remediation process, all of these wells or a subset (based on decisions to properly abandon a subset of these wells) will need to be completed as permanent wells by installing a lockable steel cover and concrete pad. This will help to prevent surface water runoff from entering the wells, vandalism, and protect them from damage. Also, a number of original wells still need to be repaired or abandoned as part of the remediation program.

No comments are provided on Appendix F, Wetlands Delineation, since that section is being reviewed by our Division of Surface Water. Comments will be provided when that review is complete.

A. RECOMMENDATIONS/ CONSIDERATIONS FOR REMEDIAL DESIGN

1. NAPL extent and remedial implications: The non aqueous phase liquids (NAPL) observed in the south east area of the former Nease facility in (temporary) monitoring wells TW06-21 and TW06-36, and even the well TW06-25 which was abandoned due to encountering NAPL, suggests a significant area of NAPL that needs to be evaluated to the first impermeable zone. The Washingtonville Shale is located 50 to 60 feet below the surface according to cross sections provided in Figures 27 and 28. This appears to be the most logical impermeable zone based on known stratigraphy. Ohio EPA recommends that this layer be evaluated beneath the general area of the wells showing (D)NAPL. The slope on this unit will also need to be determined.

   Ohio EPA agrees that the results of the groundwater investigation indicate that (as stated in Page 26, Section 6.1.1), volatile organic compounds (VOCs) were identified at elevated levels over a larger area than anticipated. Therefore, the proposed remedy of nZVI in this area should be re-evaluated. The section goes on to propose modifications to the remedy that would include installation of a shallow groundwater recovery trench and continued recovery of NAPL by pumping. Although these modifications may make sense, the Agency would recommend enhanced remediation efforts to reduce the NAPL that cannot be recovered by pumping alone. These remedy modifications will obviously need to be discussed in more detail by the technical team, including ROC, U.S.EPA and Ohio EPA representatives.

2. Southeast area contamination: Based on the results of the pre-design investigation conducted in Fall 2006, contamination above the maximum contaminant limits has been

detected in shallow ground water off-property. No current risk has been documented in these areas, since groundwater is not used as a source of potable water for residents in the area. However, the full extent of the contaminated plume needs to be delineated so that appropriate controls can be put in place to protect human health and the environment.

Contamination in the deeper aquifer may also need to be investigated: although the PZ-4 and PZ-5 monitoring well clusters at the south west and south east corners of the facility are generally uncontaminated, the deeper aquifer along the southern boundary may need to be evaluated, depending on the results of the NAPL investigation recommended, above, in order to control potential exposures as necessary.

Finally, given the sub-slab chemicals of concern and levels detected off-property in the south east area, the conceptual site model (CSM) in the south east area also needs to be re-evaluated to fully evaluate the potential for off-property exposures through the vapor intrusion pathway.

3. Potential exposures beyond the property boundary: In addition to the southeast area contamination, ground water contamination above the MCLs is also evident in ground water off ROC property, both on the east side of Allen Road (in monitoring wells G-UBA, and in the temporary wells in the valley fill area—MVF06-02 9/07 and MVF06-01), and on the west side (in monitoring wells D-8 and S-17). While there are no current exposures, institutional controls may be necessary to prevent future exposures until the contamination has been remediated to acceptable levels. It may be helpful to make the indoor air sampling conducted by ROC during the Crane-Deming property transfer part of the Site record.

4. Delineation of contamination around former Pond 4: The extent of contamination around former Ponds 4 and 7 appears to have been sufficiently characterized to support the remedy. However, the detection of PCE (at 6.2 µg/L) above the MCL in monitoring well S-21, down-gradient of former Pond 4 is somewhat unexpected. Is this indicative of a larger area of contamination? Ohio EPA recommends placing appropriate controls and monitoring the contamination in this area periodically to protect human health and the environment.

5 Mirex detections: Mirex has been infrequently detected in ground water during this (and previous) sampling events. While some of these detections are in areas around former Ponds 1 and 2 with high VOC concentrations, mirex has also been detected at 0.016 µg/L in an area of low VOC concentrations (in monitoring well S-21, presumably down gradient of Pond 7). . Is there an explanation for the (unexpected) occurrence of mirex in this area?

Also, while mirex was not detected in many of the wells where it was analyzed for, it has been detected in at concentrations ranging from 0.016 µg /L to 0.816 µg/L in several wells, including off-property, in monitoring well S-17, along Allen Road. The detections are somewhat unexpected, given the strong sorptive properties of mirex to organic media. Please consider whether there is a co-solvent effect that may be responsible for mobilizing mirex, and if so, how what additional safeguards are necessary when consolidating material in remedial design.

6. Methane concentrations: Please provide an interpretation for the high concentration (7000 ug/l) of methane at well J-LBA (Middle Kittanning Sandstone shown in Figure 11). This well is one of the furthest downgradient (est.1800 feet) from the main part of the

facility, but yet has the highest methane concentration identified in the wells analyzed for this parameter.

7. Trench considerations: Section 2.5 discusses the pump tests for the 20 foot long test interceptor trench. Data from those tests are presented in Figures 30 and 31. Ideally there should be some visible depression in the water table around the trench to demonstrate that the trench is, indeed, capturing the contaminated ground water. Thus, the water level in the trench should be somewhat lower than in the adjacent piezometers. Figure 30 shows that for pumping rates of 0.75 gpm or greater, the piezometer in the trench clearly has a lower water level than the downgradient piezometer, which indicates effective capture of the ground water. Figure 31, which gives the data for a 0.5 gpm constant rate pump test, does not show the same results. Rather, that figure indicates a lower level downgradient than in the trench. While the Agency does not want any more water than necessary to be pumped, enough water should be pumped to ensure that the trench is capturing the contamination. ROC may need to pump at a greater rate than 0.5 gpm per each 20 feet of length. The actual pumping rate should be determined from the water levels in and around the trench after its full length is installed. Note also that surface overland flow from the area of the railroad culvert near former Ponds 1 and 2 currently runs off in proximity to the proposed trench area; this may be an additional factor to be considered in remedial design.

8. Mirex in soil: As recommended in Section 6.2.1, the extent of mirex impacts in surface soil, in particular along the borders of the former facility needs to be further delineated. In some areas, analyzing the individual/ discrete samples may be helpful; in others they may have limited utility.

   - Route 14 ditch area: Both composite samples in this area are above the risk goal, but mathematically within the possibility that the individual/ discrete samples that make up the composite are below the risk goal. Depending on the analysis of the discrete samples, additional sampling may be necessary to determine the longitudinal extent of mirex contamination above the risk goal in the Route 14 ditch area.

   - Sampling units in proximity to facility boundaries: Mirex levels in composite samples in all sampling units except A02, A05 and A13 are above the risk goal for the site. Analyzing individual/ discrete samples in A01 and A04 µg /kg may better define areas of higher mirex concentrations. However, in A08, A07, A09, and A12, it may be more helpful to focus on analyzing individual/ discrete samples along the property boundary, to determine if the risk goal is met in those areas. This will also help determine if off-property sampling needs to be conducted to support remedial design.

   - Former Pond 3 areas: Analyzing individual / discrete samples in A15 and A17 may help better demarcate the "boundaries" of A16 and/ or where mirex concentrations are above the risk goal. However, it may also be necessary to better delineate the horizontal extent of mirex contamination in the areas south east of Pond 3 (i.e, beyond A16 with 27,400 µg /kg of mirex).

B. REVISIONS/ CLARIFICATIONS REQUESTED

9. Section 2.2.2, Page 9, 1st partial paragraph: Was monitoring well S-9 sampled? It does not appear so per Table 2. Please revise as necessary.

10. Section 2.3.2, Page 11: The first bullet under section 2.3.2 states that, "The extent of VOC impacts in the shallow overburden beyond the Nease property are delineated based on results of off-site temporary wells...". Since there is 2100 µg /L total VOC's in off-site well TW06-28 (and no sampling downgradient of that), the VOC impacts have not actually been delineated. This bullet should be revised or removed. Also, data from monitoring well TW06-07 have also been factored into delineating VOCs beyond the property boundary. Please add this well to the list of monitoring wells listed.

11. Section 2.3.3, Page 12, Initial NAPL Assessment: The term NAPL (non aqueous phase liquid) was used in the document instead of DNAPL (dense non-aqueous phase liquid). Were floating layers found or just dense sinking layers?

12. Section 3.1.3, Page 19: Please add a footnote to clarify that Ohio EPA's Division of Environmental Services (DES) functioned as an independent contractor to ROC, and Golder reviewed and validated the analytical results. The analytical results were not provided by DES directly to either USEPA or Ohio EPA's Division of Emergency & Remedial Response.

13. Table 4: Were xylenes detected in any of the monitoring well data? (Xylene is missing from the table.)

14. Table 5: In TW-06-23 Tetrachloroethene (PCE) detected at 6.3 ppb per original data tables (11/07/06); this appears to be missing in this report. Please cross-check with the original analytical data.

15. Table 11: Mirex in soil has been reported as 3,550 µg/ kg in area A 08 in Table 11; per communication from Golder, this is an error. The actual level detected is 35,000 µg/ kg. Please revise the table.

16. Figure 3: Two A-24 sampling locations are noted in Figure 3 for former Pond 3. ROC's consultant, Golder clarified that one of the locations does not exist. Also, sampling location A-21 should be identified in the figure.

17. Figure 29: Southern area ground water contour maps need to be revised to show TW06-28 on the north side of the 1184 contour line. Also, it is DDAGW's opinion that the interpretation of the shallow groundwater flow direction on the south side of SR 14 should be inferred to follow local topography.

End of comments on the June 2007 Baseline Technical memorandum (excluding Appendix F)